

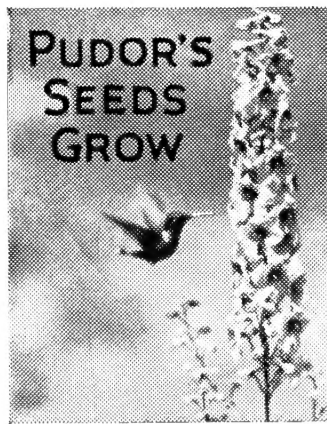
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“Growing Plants from Seeds”

A Missouri Botanical Garden Bulletin
St. Louis, Mo.

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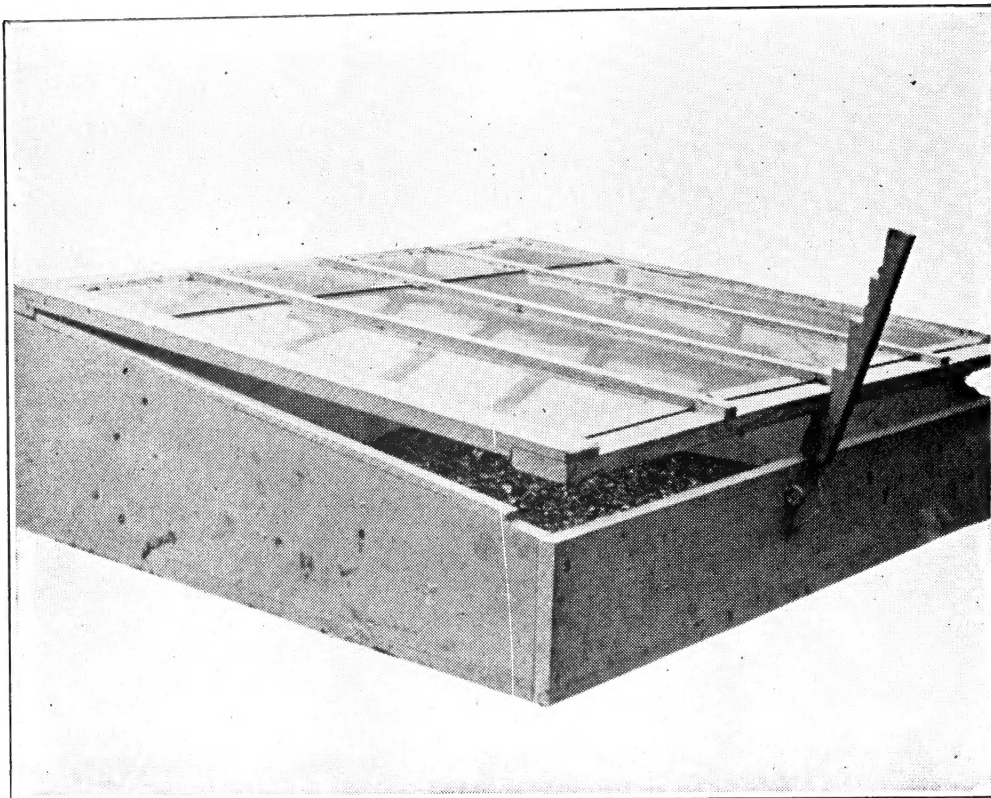
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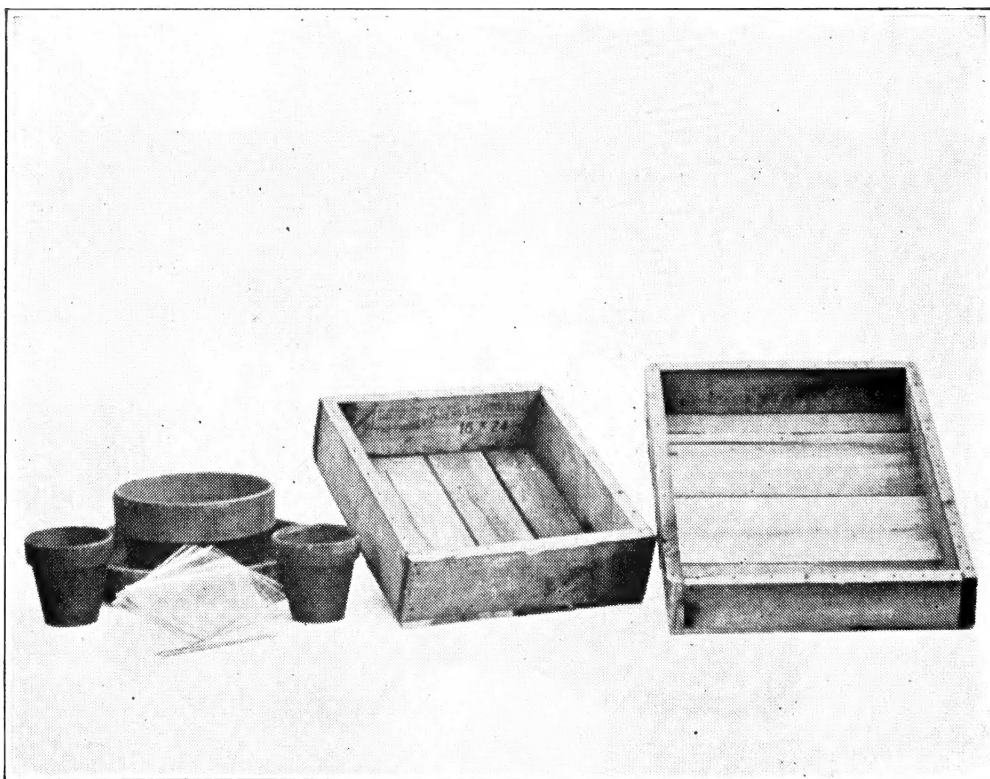
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COLDFRAME



POTS, BOXES, AND COVER-GLASSES

Missouri Botanical Garden Bulletin

"Growing Plants from Seeds"

With the beginning of the year the new used catalogues make their appearance, and advertisements in magazines invite those interested to send for copies. Upon turning the pages of the catalogues the imagination of the gardener is excited, and he sees in his mind's eye his beautiful garden the following summer. However, the gorgeous illustrations and the many glowing descriptions of plants often arouse higher expectations than he is able to achieve. So often he blames the seedsman for the poor quality of the seed when they fail to germinate, but the fault is really his in not knowing how to start the plants. It is true that old seed sometimes find their way to various stores where they are kept from year to year, **BUT IF BOUGHT FROM RELIABLE FIRMS** or from racks where the seed are guaranteed to be fresh, **FAILURE TO GROW PLANTS MUST BE LAID TO IGNORANCE OF GARDEN PRINCIPLES.** The object of this article, with accompanying illustrations, is to help the home gardener with his problems in raising plants from seed.

The seedsmen's catalogues are improving every year, both in illustrations and descriptions. Some firms issue catalogues which contain much helpful information with each kind of plant listed; others have instructions printed on the seed packets, and still others include cultural leaflets with every shipment of seed. One small packet of a variety usually contains all the seed necessary for the average garden if they are started indoors. If the seed are sown directly outdoors allowances must be made for the many obstacles that often prevent the seedlings

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from getting a good start. Torrential rains frequently wash away the seed before they have had a chance to germinate. If the soil is very heavy or has been poorly prepared the seedlings germinate, but lack the strength to develop further.

Any one intending to raise annuals or perennials from seed will find the beginning stage the most interesting. However, he must curb his enthusiasm and not start the plants too early in the season, or they become stunted and crowded before it is time to plant them out. As there always is some danger of cold weather up to the early part of May, it is best not to start the quick-growing kinds until a month or six weeks before time for planting outdoors. That means that most of the seeds should be sown toward the end of March and the beginning of April. Most perennials and those annuals that require a long period for their development may be sown in February. Such annuals are lobelia, penstemon, petunia, salvia, snapdragon, verbena, and vinca. Another reason for delaying planting of the seed is the cold weather in February and March, and if the gardener is entirely dependent upon the coldframe for raising his plants he will lose some of them if started too early.

After the latter part of March the weather is generally warm enough for growing seedlings in a coldframe. Figure 1, plate 6, shows a small frame any one can build with little effort. It is not necessary to have a coldframe sash. Second-hand window sash can be obtained from housewrecking companies for a few dollars, and the frame can be built to the size of the sash. If the seed are sown in April a glass cover for the frame is not absolutely necessary. Oiled-cloth, cheesecloth or even boards can be used as a covering when protection is needed in colder weather. If seedlings are already growing in the coldframe and a sudden drop in temperature down to the freezing point or lower is indicated, boards, old blankets, sacks, etc., may be used as an extra cover until warmer weather returns. However, a glass cover is an advantage, since sunlight can be admitted on cold days. Naturally,

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the plants in the frame with the glass roof would benefit by the few extra days of light, while those in practically total darkness would suffer to a certain extent.

In selecting a location for the frames in the garden a position should be chosen that is sheltered on the west and north by a fence, building, or shrubbery. All frames should have a slope to carry off the rain, and this slope should be to the south. It is hardly necessary to state that the frame should be so placed that it is in the sunlight the greater part of the day. If near-by buildings shade the garden during a part of the day, a position receiving the morning rather than afternoon light should be chosen for the coldframes.

Sunlight is essential to the growth of plants. Seed may be sown in boxes or plots and set on any window sill. However, after the seedlings are up they must be placed in some window receiving sunlight. A southern window is best, but if this is not available one with an eastern or western exposure will do, the former being preferable. The temperature of the room should be between 60° and 70° F. When the sun shines through the window-pane the temperature mounts considerably, but this will be for only a few hours. A little fresh air during this time will greatly benefit the plants. After the seedlings are started they should be placed in a small frame outdoors if possible.

Pots, boxes, etc..—Tin cans, cigar boxes, discarded granite ware, pots, and special boxes termed flats may be used in which to start seed (fig. 2, pl. 6). Convenient boxes may be made of various sizes, but if very large they are heavy to handle when filled with wet soil. Two convenient sizes are 12 x 15 x 3 inches and 15 x 20 x 3 inches. A depth of 3 inches is sufficient for the short time the plants are in the flats.

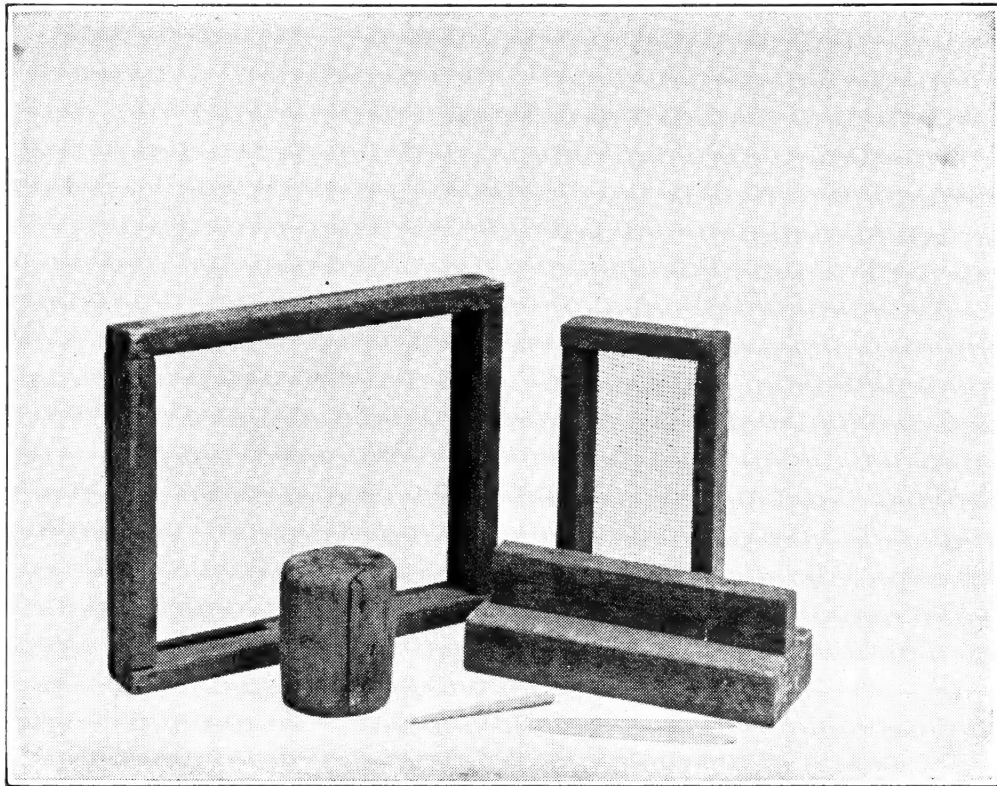
Drainage.—No matter what type of receptacle is used the bottom should have holes to let out the excess moisture. If the boxes are of wood the bottoms should have several holes bored in them or the boards should be

spaced at least a quarter of an inch apart. If the boards that make up the bottom of the flat are placed too close together they will swell when moist and make the box water-tight. Any receptacle that does not permit the excess water to drain away will soon become water-logged. The soil then becomes sour and the plants die. Even though provision for drainage is made it is well to place some coarse material in the bottom of any receptacle to prevent the fine soil from clogging the holes or cracks. For this purpose broken pieces of flower pots (termed crocks), gravel, stones, and cinders may be used.

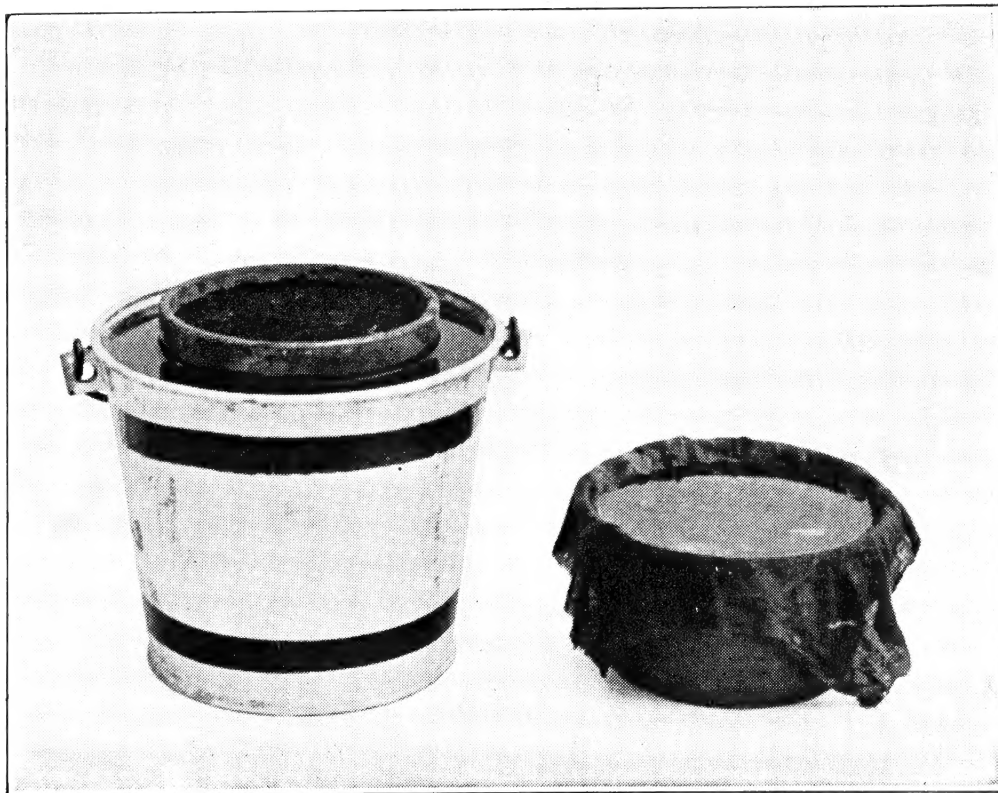
Flower pots come in various sizes, the size being measured by the diameter of the pot. A four-inch pot is about the smallest size that should be used for sowing seed. When only a very small quantity of seed is to be sown it is best to use a flower pot, the seed being broadcasted over the surface. If many kinds of seed are to be sown, most of which will germinate in about the same length of time, much space can be saved by sowing them in rows in boxes. Pots take up considerable space, while a small box can contain many rows of seedlings. Moreover, soil or sand in boxes will not dry out as rapidly as in pots.

Sieves, tampers, dibbers, labels.—Any one interested in growing plants from seed should secure some essential tools. They are all very simple and can be easily made. Sieves simplify the operation of sowing seed, especially fine seed, and once they are used they become a necessity. A fine screen need not be more than six or eight inches square, but one with a coarser mesh for seiving large quantities of potting soil should be one by two feet or larger. The fine screen may be made by tacking a piece of window-screen wire cloth to a wooden frame. For coarser screens wire screening $\frac{1}{8}$ -, $\frac{1}{4}$ -, or $\frac{1}{2}$ -inch mesh is used, the size of the mesh depending upon the nature of the soil and the purpose for which it is wanted. It would not only take a very long time to sift through a fine sieve all the soil necessary for some zinnias, but also it would not be best for the plants. Finely sifted soil packs with

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SCREENS, TAMPERS, DIBBER AND LABELS



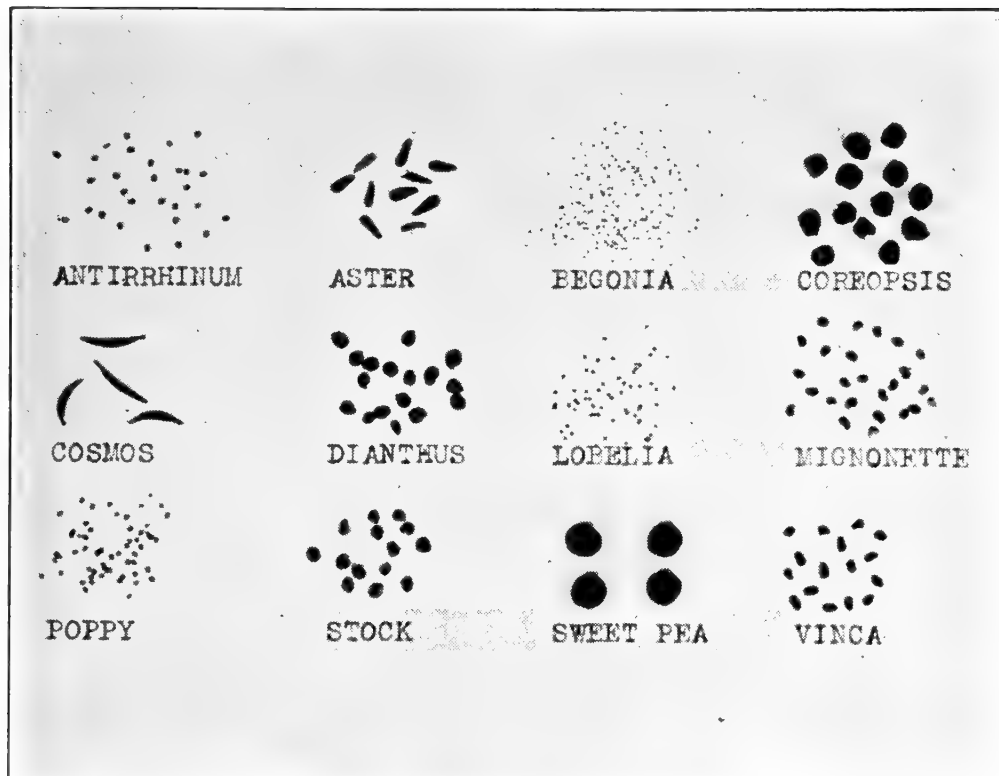
POTS OF SEED WATERED BY THE BUCKET AND THE CLOTH METHODS

repeated watering, thus excluding the air. The soil then becomes sour and the plants grown in it become stunted. The screen with the finest mesh is used only for small seed; for general use the sieve with a $\frac{1}{4}$ -inch mesh is the proper size; for larger plants a coarser mesh should be used.

Figure 1, plate 7, shows two tampers, a square and a round one. The square one is easily made from a piece of one or two-inch lumber, and may be about 3 x 6 inches or longer. An ordinary brick may serve for a tamper, but is too heavy to be used for any length of time. The round tamper is useful when sowing seed in pots, an empty flower pot answering the purpose. A dibber is a small stick about the size of a lead pencil. It is used when seedlings are transplanted. Wooden meat skewers make excellent dibbers.

The name of the plant and date of sowing the seed should always be written on a label. Later in the summer the plants blooming at the same time might fit into some particular scheme. This scheme could not be duplicated another season unless a record were kept of the time the plants were started. Moreover, many plants in the seedling stage look so much alike that confusion might result unless they were labeled.

Watering cans and methods of watering seed pots and boxes.—The average sprinkling can that is sold in the stores throws a rather coarse stream of water. Extremely fine seed are barely pressed into the soil when sown and when watered with a heavy stream they are almost entirely washed away. Better types of cans may be purchased from seed stores and florists' supply houses. With a little care and patience seedlings may be started without the use of a watering can or with one of the poorer types. Figure 2, plate 7, shows two methods of watering seed. Setting the pot in a bucket of water and allowing the water to come up through the hole in the bottom until the surface of the soil becomes moist is an excellent way. With this method there is absolutely no danger of disturbing fine seeds as would be the case if



TWELVE KINDS OF GARDEN SEED



DIFFERENCES IN GERMINATION OF SEED SOWN AT VARIOUS DEPTHS

watered from the top. One is also certain that the soil is thoroughly saturated with water. After the surface soil is moist the pot is removed from the bucket and the surplus water allowed to drain off before replacing the pot in the window or frame. In order to prevent too rapid evaporation from the surface, the pot is sometimes covered with a piece of glass or paper until the seed germinate. The sub-irrigation method will only have to be practised a few times before the seed are up. Another way to prevent the seed from being washed to the side of the pot or box when sprinkling with a can is shown in figure 2, plate 7. A piece of cloth is moistened and laid on the pot, and the sprinkling done through the cloth. The force of the water is broken by the cloth, and the moisture oozes through to the soil. After enough water has passed through the cloth should be removed.

Types and sizes of seed.—Seed vary a great deal in size, shape, and the length of time required for germination. Figure 1, plate 8, gives a good idea of the sizes of some common flower seeds. It can easily be understood how difficult it is to raise some of these plants from seed when the essentials of germination are not understood. If the seeds of petunias and lobelias are covered with more than a quarter of an inch of soil failure to germinate may be expected, but if barely covered with soil or lightly pressed into the soil more seedlings will come up than can be used. Seed that are sown on the surface of the soil indoors or in a frame where practically all conditions of soil, moisture, light, and heat can be controlled will germinate readily, but if this were done in the open failure would result.

There is a certain relation between the depth that seed are sown and their power to germinate. Seed are frequently sown too deeply. A seed that is covered with much soil does not get the proper amount of air and has the added burden of pushing up the layer of soil above it. Air (oxygen) is absolutely necessary for the germination of seeds. Sow a seed the proper way and watch it germinate, but place some of the seed in water, which con-

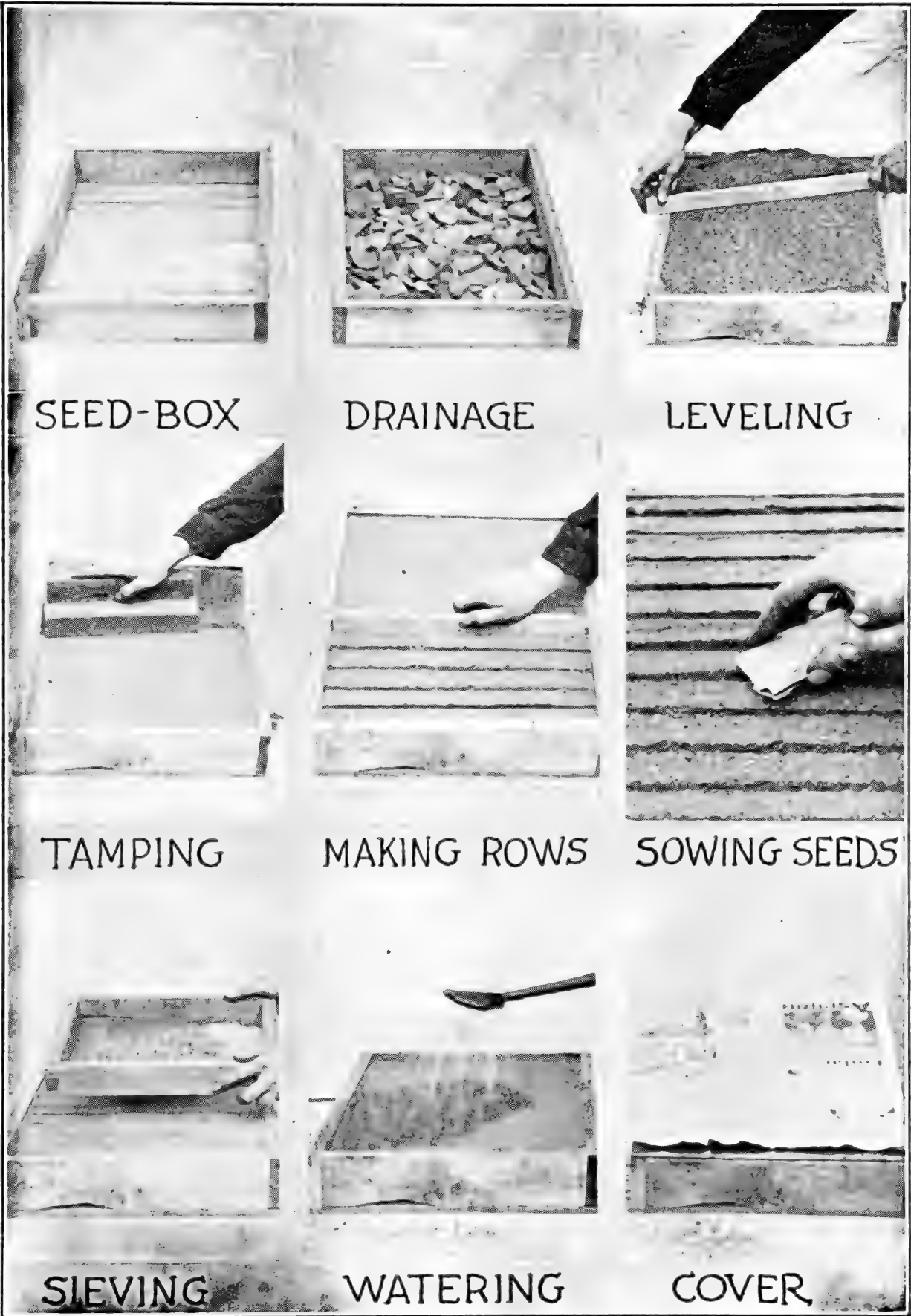
tains very little air, and they will rot. Figure 2, plate 8, shows very clearly what happens to seed sown at various depths. Those near the surface were the first to germinate and grow, while some of the others lower down have germinated, the odds against them are too great and they will finally succumb. Some of the seed planted deep have already rotted. When sowing seed the extremely small ones should be pressed into the soil after it has been watered, or the sub-irrigation bucket method used. All small seed should barely be covered, just enough fine soil or sand being passed through the sieve until they are no longer visible. In sieving soil or sand over small seed the sieve should be held not more than an inch or two above the surface of the soil. If held higher, the particles of sand or soil striking the seeds will cause them to jump in all directions, with the result that some of them will immediately be covered and the remainder will still be on the surface, or some will have a light covering and others a heavy one. This will result in uneven and many times poor germination. Larger seed, such as coreopsis, hollyhocks, asters, and cornflowers may be sown somewhat deeper, being covered with about an eighth of an inch of soil.

Soil medium in which to sow seed.—Most seed have been and probably always will be sown in soil. It is the commonest material available and gives good results. The best soil for the purpose is composed of about one part loam, one part leaf-mold, and one part sand. By loam is meant a soil that contains a liberal amount of vegetable matter in the form of decaying roots, leaves, etc.

Sand is the most convenient material in which seed may be sown. However, if sand is used the seed require much closer watching. After a seedling has germinated and the roots are formed they begin searching for food. Sand is practically devoid of any food material. Consequently as soon as the seedlings have germinated and are large enough for handling they should be transplanted to pots or boxes containing soil. If left in pure sand for a

length of time they will remain alive, but will be stunted. Sand dries out rapidly, and if not kept constantly moist the seedlings will be lost at the critical time of germination. Seedlings that have germinated and whose roots extend down about an inch will not suffer if the surface sand becomes dry. However, extremely fine seed that are very near the surface might just be germinating when the surface dries out, and if the sun is shining they will be lost in a short time. Aside from the two main objections to sand as a germinating medium—lack of food and the rapidity with which it dries out—it has so many good qualities that it cannot be overlooked as a material in which to sow seed.

Seedlings are always subject to the ravages of the damping-off disease. This disease can attack a crop of seedlings and destroy them over night. Figure 1, plate 13, gives a good illustration of the nature of the disease and its work. The thread-like structure of the parasite spreads over the surface of the soil and attacks the seedlings. The illustration referred to shows zinnia seedlings in various stages of the attack. The first one has threads of the mycelium around its base; the second and third have already lost their roots; and the fourth seedling has completely collapsed. This disease is always associated with a great amount of humidity, and on that account seedlings or seed boxes in which the seed are just germinating should never be watered toward evening. The surface of the pots or boxes should be dry at night, because it is at that time this disease is most active. If seed are sown in sand instead of soil there is much less danger from attacks of the damping-off disease. One of the chief reasons why sand is so much better than soil for sowing seed is that it does not retain as much moisture as soil, even though it is watered more frequently. Seedlings will be lost by the damping-off disease, even if sown in sand, if the seed are crowded or if the air about the seedlings is very humid. This humid condition can easily be created if the cover glass or paper is left on the boxes or pots after the seedlings are up.



SEED-SOWING OPERATIONS

Seedlings germinate more uniformly in sand than in soil and when they are pushing up the sand rolls to the side. Seed sown in soil and covered with a layer of soil often have difficulty in pushing up, or if the seedlings are close together a whole crust of soil is pushed up, much to their detriment. Seedlings are much more easily separated for transplanting when grown in sand than in soil. Because sand drains so readily it always warms up quicker and this hastens germination. The better germination in sand is well illustrated by the tomato seedlings shown in figure 1, plate 10. One pot contained pure sand, the other soil, and the two pots were treated alike in all respects. If the sand is dirty, it should be washed. To do this a bucket is filled about half full of sand and water run in through a hose. The dirt, being lighter than sand, will float and will be carried over the top of the bucket. Moving the hose about will rapidly free the dirt, and when the water is clear the sand is clean.

Sowing the seed.—Plate 9 shows the essential operations in the sowing of seed in boxes, and with few exceptions the same methods hold true if pots or any other receptacles are used. As previously mentioned, the box should have holes or cracks in the bottom. The first step is to cover these openings with broken crock, stones, etc. The box should then be filled to overflowing with sand or soil, leveled with a stick, and tamped lightly. The surface of the soil will then be about $\frac{3}{8}$ of an inch below the top edge of the box. If the soil or sand is an inch below the top of the box much trouble may be anticipated with the damping-off disease due to the poorer air circulation. After the soil is tamped, the rows are marked with a stick or plant label, the stick being pressed into the surface to the depth wanted for the seed. For fine seed the surface is barely marked, for large seed a deeper trench is required. Before making the rows the soil or sand must be moist, for if dry it immediately rolls back in the trench when the stick is withdrawn. After the rows are made the seed is ready for sowing, and for convenience one corner of the seed packet is torn off and the packet lightly tapped to secure an even distribution of

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TOMATO SEED SOWN IN SAND AND SOIL, SHOWING MUCH
BETTER AND QUICKER GERMINATION IN SAND



SPROUTING SEEDLINGS

the seed along the rows. It is best to allow one row for each kind of seed, or at the most one-half row for a kind. In this way the label can be placed either at the beginning or at the end of the row. If labels are placed in the rows they will interfere with the glass or paper cover.

A mouse can do much damage in a pot or flat of seed in one night, so the pot or box should be covered with a sheet of glass or a board. After the seed have germinated and are growing there is seldom any danger from mice. While on the subject of losing seed by other means than the damping-off disease it might be well to warn against the cunning antics of ants if they are in the neighborhood of a box of seeds. Ants will carry away any seed that is not too large for them to handle. They prefer seed just as they are germinating, but will also carry away newly sown seed. As they are wont to lick anything, be it insect or seed, that exudes a sweet substance, they supposedly carry the seed to their nests. It is very disheartening to discover that the fine seed that was so painstakingly sown the previous day has been and is being carried away by an army of ants. They will sometimes appear when least expected. If they are in the neighborhood of a box of seed it is well to place a water barrier between them and the seed box. One or more saucers of water in which empty pots are inverted and on which the box of seed is set will prevent them from causing any trouble. If only a pot of seed is to be protected it may be stood on a half brick in a saucer or pan of water. If many pots or boxes are used they may be set on a platform supported by standing four bricks in water.

After the seed are all sown sand is sieved over the rows. If some sand has been set aside to dry, it will run through the sieve very easily. The deeper rows containing the large seed should receive a heavier covering than the small seed in the shallow rows. After the seed are all covered the flat is watered and then a pane of glass or a piece of paper or both are placed over the box. Moisture will accumulate on the glass and should be removed each morning. If the glass is carefully removed



LIFTING SEEDLINGS



DIBBLING HOLES



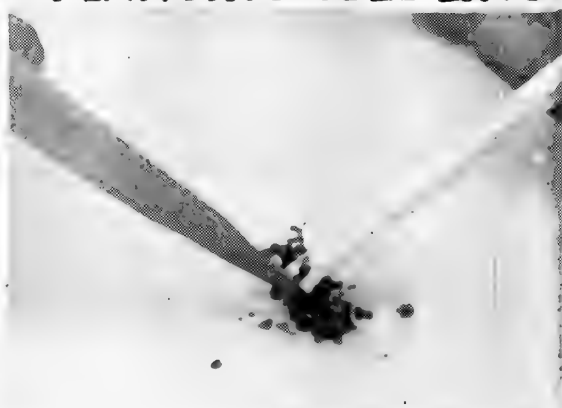
PINCHING ROOT



PLANTING SEEDLING



FIRMING SOIL



LIFTING TINY SEEDLING



PLANTING SEEDLING



FIRMING SOIL

TRANSPLANTING OPERATIONS

from the pot and held by one corner, the water will run off quickly. If the glass is carelessly removed the large drops of water will splash fine seed in all directions. When the seed begin germinating the glass or paper should be raised slightly at one side to admit air, and after the seedlings begin pushing through, the box should be uncovered. A great many seedlings will be lost if the cover is left on too long. The close atmosphere under the cover is ideal for the spread of fungous growths.

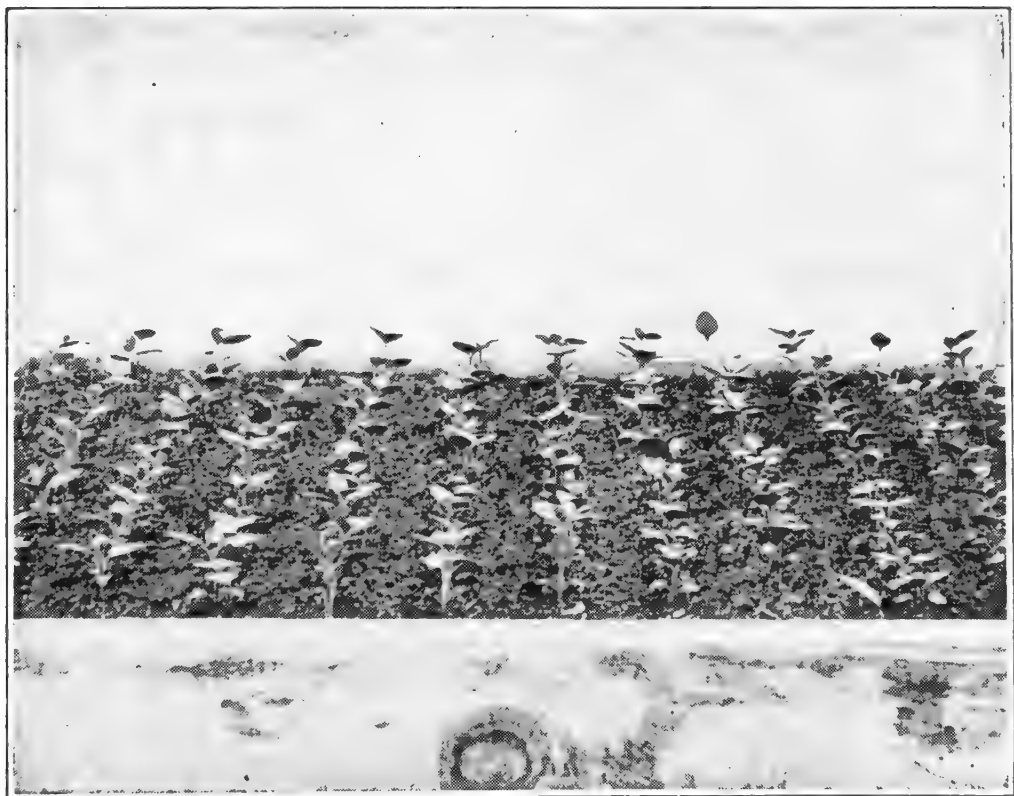
In the last few years various preparations have been placed on the market that will check and prevent fungous diseases associated with germinating seedlings. Figure 2, plate 13, shows some of these materials. They may be used either dry or in liquid form.

Eight operations in transplanting seedlings.—After the seedlings are up and are sufficiently large to handle they are ready for transplanting. Removing seedlings from their boxes should not be postponed too long. While seed should not be sown thickly they are always more or less crowded in the boxes or pots and should be separated from their neighbors as soon as possible. Plate 11 illustrates the various stages of transplanting seedlings. The majority of seedling plants are sufficiently large to be handled with the fingers. They either have a leaf large enough to act as a handle or are strong enough to be held by the stem. Whenever possible a seedling should be held by a leaf, as then there is less danger of crushing the tender plant. Some seedlings, notably petunias, lobelias, begonias, etc., are so very small that it is impossible to handle them with the fingers. The last three figures of plate 11 show how minute seedlings are handled.

The box into which the seedlings are to be transplanted should contain some drainage material and should then be filled up with a light soil. The box is leveled and tamped in the same manner as when the seed were sown. The surface should be finished with some finely sifted soil and tamped. If this is not done, especially when small seedlings are to be transplanted, the small lumps of soil will cause much annoyance. If the box of soil is very dry



CULTIVATING SEEDLINGS



SEEDLING SNAPDRAGONS READY FOR POTTING

it should be watered before transplanting the seedlings and then set aside. A box of soil that is damp and needs no water is to be preferred to one that has been watered an hour before being used. Soggy soil is a nuisance. It clings to the dibber and the fingers.

To remove the seedlings from the seed box, with the right hand insert a stick or plant label beneath the roots and gently raise a bunch of seedlings, at the same time grasping them with the left hand. Lay them on a piece of paper and bring them to the box of soil. Do not take all of the seedlings from the box at one time as they dry out very rapidly. Mark the rows on the surface of the soil with a straight-edged stick. Space the rows in the flat from one and a half to two or three inches apart, depending upon the size of the plants. Also space the plants the same distance in the rows. The size of the seedlings soon after germinating serves as a fair indication of the distance apart to transplant them. The larger the seedling the more space it will occupy in a given time. With the dibber make a hole in the soil deep enough to receive the roots without crowding. Slightly turn the dibber back and forth as it is withdrawn from the hole to prevent any soil from rolling back. If the seedlings have unusually long tap-roots, pinch them back half way. This will do no harm and will cause the plantlet to send out lateral roots. After the seedling is placed in the hole the dibber is again thrust into the soil near the seedling and the soil firmly pushed against the roots. If an air pocket is left at the bottom of the hole the roots cannot come in contact with the soil. Many seedlings poorly transplanted will survive, but in order that they may not be checked in growth the soil should be immediately brought in contact with their roots. Seedlings should be transplanted at about the same depth as they were in the seed box. However, when seedlings are very spindly and have a tendency to shoot up, they should be planted deeper in the hole. There are some kinds of seedlings, the delphinium being an example, in which the heart of the plant is quite low. In transplanting such seedlings one must be careful not to cover the center of the plant,

lest it might rot. Again there are seedlings that produce robust plants that are quite large (lupines, castor beans, etc.) These should be immediately set into two or two and one-half-inch pots.

In order that minute seedlings may safely be transferred to flats of soil a small wooden fork made from a plant label or any piece of thin wood is used. With this fork the seedling is lifted and if it clings to some of the others they are separated with the dibber. The dibber for transplanting tiny seedlings should have more of a point than the ordinary dibber. A collection of dibbers of various thicknesses for different sizes of seedlings will prove most convenient. Holding the wooden fork with the left hand, lift the seedling to the seed box, barely make a depression in the soil then lower the seedling and firm a little soil around it with the dibber. Tiny seedlings must be carefully watered until they produce enough roots to hold them in place. A watering pot with a fine-spray nozzle is essential to such work. If very small seedlings are set in a flower pot they can be watered by the sub-irrigation bucket method. After the flat is filled with plants it should be watered and placed in the frame or window. If the sun is shining brightly, shade the plants with paper the first and second days.

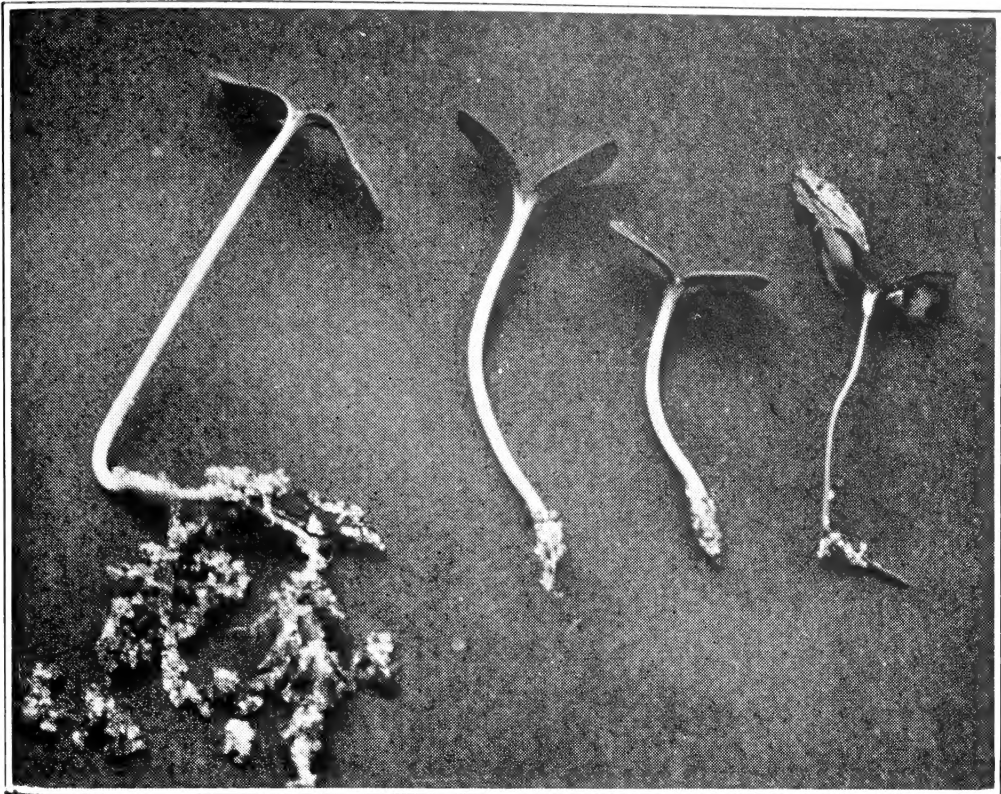
Seedlings that have been crushed or broken in handling will wilt and die. If they are transplanted to a pot instead of a box, and this can be done if only a few dozen of a kind are wanted, the surface of the soil should not be more than one-fourth inch below the top of the pot. Larger seedlings may be set deeper. Seedlings planted in flats will not dry out as rapidly as those in pots, and more can be grown in a given space if planted in rows in flats than if grown in pots. After the seedlings are in the flats for a length of time the soil becomes packed by repeated watering. Weed seeds will also have germinated and will begin to crowd the seedlings. Cultivating the flats (fig. 1, pl. 12) will discourage the weeds and will benefit the plants. Seedlings that grow too rapidly and show no signs of branching should be pinched

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when they become two and three inches high. When the seedlings become crowded they should be transplanted to pots (fig. 2, pl. 12). If it is intended to leave the seedlings in the flats until time for planting directly into the garden, then they should have more space in the flats when they are transplanted from the seed-box.

Seedlings that are to be transplanted to pots should be carefully lifted with a spoon or plant label and should have as much soil adhering to the roots as possible. The plant is held in the center of the pot. Then the soil is added and firmed about the seedling. After transplanting to pots, water the seedlings thoroughly. One watering is usually not sufficient, especially when the potting soil is quite dry. On clear days shade the seedlings by laying newspapers over them. The larger the seedling at transplanting time the greater the danger of wilting. This is due to the number of roots that are torn when removing the plants from the boxes. Several copious waterings and shade one or two days after the operation will restore any plant to its former vigor.

When warm weather has arrived and the flower beds are prepared the plants are taken out of the pots and set in their place. Plants whose roots have become matted due to the length of time in the pots should have the bottom roots loosened before planting. This will break up the distinct ball the roots have been forming and will cause them to strike out in all directions and take hold of the soil in the flower bed. Plants that have been planted in beds should receive a good watering as soon as possible after all are set. The same precautions used when transplanted from boxes to pots must be taken against wilting when planting the seedlings in the flower beds. Cloudy weather is ideal for planting flowers outside. Late afternoon and evening is better than the morning for transplanting as the plants can revive during the night. Transplanting should not be done on extremely hot and windy days. A good gardener will find ways and means to overcome all the difficulties that will at times confront him.



ZINNIA SEEDLINGS ATTACKED BY THE DAMPING-OFF FUNGUS



CHEMICAL PREPARATIONS THAT WILL CONTROL
DAMPING-OFF DISEASES



SOME FACTS ABOUT THE GARDEN

The Missouri Botanic Garden was opened to the public by Mr. Henry Shaw about 1860. From that date to the death of Mr. Shaw, in 1889, the Garden was maintained under the personal direction of its founder, and, while virtually a private garden, it was, except at certain stated times, always open to the public. By a provision of Mr. Shaw's will the Garden passed at his death into the hands of a Board of Trustees. The original members of the Board were designated in the will, and the board so constituted, exclusive of certain ex-officio members, is self-perpetuating. By a further provision of the will, the immediate direction of the Garden is vested in a Director, appointed by the Board of Trustees. The Garden receives no income from city or state, but is supported entirely from funds left by the founder.

The city Garden comprises about 75 acres. There is now in process of development a tract of land of over 1,500 acres outside the city limits which is to be devoted to (1) the propagation and growing of plants, trees and shrubs, designed for showing either indoors or outside, at the city Garden, thus avoiding the existing difficulties of growing plants in the city atmosphere; (2) gradually establishing an arboretum as well as holding a certain area as a forest reservation, with the idea that possibly at some future time this may become the new botanical garden. About 12,000 species of plants are growing in the Garden.

The Garden is open to the public every day in the year, except New Year's, Fourth of July, Labor Day and Christmas—week days from 8:00 a. m. until one-half hour after sunset; Sundays from 10:00 a. m. until sunset.

The main entrance to the Garden is located at Tower Grove Avenue and Flora Place, on the Vandeventer Avenue car line. Transfer south from all intersecting lines. The Garden may also be reached by Bus Route No. 12, to which all other motorbus lines transfer.

